Natural Resources

Goal: Maintain natural features within and surrounding Lander that contribute to our character, our quality of life, and our economic potential.

Core Principle: Management of natural resources is an investment in the health, safety, beauty, prosperity, and quality of life enjoyed by Lander.

Lander is blessed with an abundance of natural resources. In many ways, nature defines our city's character and is integral to who and what we are. It is a shared wealth that, managed wisely, will continue to sustain us into the future.

Objective: Promote and maintain green spaces, open spaces, trees and vegetation

Perhaps more than any other state, Wyoming means wide open places. Covered with grass and sagebrush dotted with trees outlining streams and rivers and crowning taller peaks, these places are havens for wildlife and one of the features Lander residents love best. One of our most significant challenges is to find a way to grow in harmony with our landscape so that we preserve rather than destroy the elements that define what it means to live here.

Actions:

2-1. Require a minimum of 20% preserved open space within each residential development consisting of ten or more lots.

Requiring permanently preserved open space within each residential development helps to ensure that we preserve as we grow. It also makes each development accountable for paying for and managing this space. During implementation, the city should consider allowing some or all of this space to be donated to a governmental or non-profit association set-up and willing to maintain it in perpetuity. The city should also consider allowing dedication and donation of offsite parcels equal to 20% of the land developed whenever such parcels are within or adjacent to an established or planned park, wilderness area, or trail system.

2-2. Require cluster development for subdivisions with more than ten lots.

Cluster development means grouping houses on smaller lots within a development site while permanently preserving the remaining land as common open space or conservation areas. Clustering can create a win-win situation for both the developer and the city. The upfront costs of the development for infrastructure such as streets, water lines, sewer lines, and sidewalks may be greatly reduced. The city's cost of maintaining this infrastructure is reduced, and the public benefits in having more permanently protected open space. Open space may be along rivers and creeks and in wetlands, which could improve water quality

and habitat, and potentially reduce the risk of flooding. It could be donated to a public park, wilderness or trail system expanding the area for all to enjoy; or, the open space could be maintained by a homeowners association for the benefit of the residents reducing demand for public parks and open space. Establishing minimum standards for clustering as well as incentives to exceed those minimums in the subdivision regulations will be required to implement this action.

2-3. Encourage infill development.

Infill development means using land within existing developed areas for further construction or development. Lots in these areas often have adjacent roads, sidewalks, and utilities that can support additional growth without further public or private investment. They are convenient to city residents and are not typically providing any significant public benefit as an undeveloped or underdeveloped site. Infill often increases the tax base without further public investment and it helps to prevent sprawl.

2-4. Update the city's tree inventory to identify trees that are significant in terms of their size, their species, or their contribution to the heritage of Lander.

Trees provide habitat, food and shade. They stabilize river banks and prevent erosion. They remove pollutants from the air and enrich the soil around them. Trees can be landmarks and windbreaks, and they can define public spaces. Some trees are more special than others due to their size, their beauty, their role in the natural environment, and their place in history. Protecting these trees is important to protecting what we love about Lander. The first step in protection is to have an up-to-date inventory of the healthy tree stock within Lander that identifies what we want to protect. Lander has an Urban Forestry Council. The Council conducted an inventory of City Park in 2009. They also produced a 63 page brochure titled "Trees and Shrubs of Lander, Wyoming," which highlights the types of trees and shrubs growing in the Lander area as well as the location of specimen plants.

2-5. Adopt an ordinance to protect significant, healthy trees.

Having a tree inventory that identifies important trees won't protect those trees from deliberate destruction. Adopting an ordinance tied to the inventory will. In addition to minimum regulation, the ordinance should include incentives for protection of healthy trees.

Measures of Progress:

- Number of acres of preserved open space
- Number of sites containing preserved open space
- Percentage of significant trees protected

Objective: Preserve important public lands and scenic vistas

Lander is the gateway to significant public lands used for recreation, hunting, teaching, fishing and habitat. Most of this land is owned and managed by the federal government, although some is owned and managed by the state. Protecting this land is important to the identity and future of Lander.

Actions:

2-6. Support state and federal programs that acquire and protect public lands, trails, and scenic areas.

While Lander has no authority over state or federal lands, it can influence decision makers who do. Closely monitoring the status of laws, policies and potential acquisitions and sales is critical. Lander should provide input at every opportunity to ensure that lands, trails and scenic areas are protected and, whenever possible, expanded.

2-7. Promote and protect public access to public lands and rivers.

Having significant public lands and rivers is important to Lander. Having public access to those resources, however, is very important to our citizens and many of our businesses. Without access, these resources provide mostly indirect benefits to the city. The direct benefits associated with using public lands and rivers for recreation, hunting, fishing and teaching require good public access.

Measures of Progress:

- Number of acres of preserved public land
- Number of identified and protected important scenic vistas
- Number of public access points to public lands and rivers
- Number and length of public trails

Objective: Protect habitat and wildlife areas

Habitat and wildlife areas are important not only to the wildlife that lives there, but to the citizens and businesses within Lander that depend on that wildlife. As a gateway to the Wind River Range and significant public lands, Lander's economy is dependent upon quality public lands and a healthy and robust wildlife. Destruction of animal and plant habitat would significantly reduce the number and variety of species as well as the overall health of the ecosystem on which we all depend.

Actions:

2-8. Encourage the use of native plants in private landscape areas and require the use of native plants in public landscape areas.

Non-native species can provide interest and beauty in the landscape, but too often they become invasive and may replace native species that provide critical habitat and food

supplies for wildlife. Non-native species are also far less likely to thrive without significant investments in water, fertilizer, and pesticides.

2-9. Preserve existing stands of native trees and shrubs whenever possible, especially along riparian corridors.

Native trees and shrubs provide critical habitat for wildlife. Located along riparian, or streamside, corridors, native plants prevent stream bank erosion and help to moderate the temperature of the water, which can be very important to native plants and animals.

2-10. Map and protect important wetland areas.

Wetlands, once thought of as wastelands, are now known to play a very important role in our ecosystem. They improve water quality. They provide temporary storage for flood waters preventing downstream erosion and flooding. They are critical habitats for fish and wildlife and one of the most biologically productive ecosystems on the planet.

2-11. Minimize development within riparian areas that impacts vegetation and natural stream bank contours or otherwise impacts bank stability.

A stable streambank withstands periodic flooding and provides a defined channel and critical wildlife habitat. Healthy rivers and streams have stable banks. Where stream banks have become unstable, erosion increases, fish populations decline, and the overall health of the ecosystem is compromised.

2-12. Map and protect important wildlife corridors.

Thousands of species of mammals, fish, insects, birds, reptiles and amphibians migrate every year across land, along rivers and streams, and in patterns that vary from north to south, east to west, high to low altitude and then in reverse. Species that don't migrate seasonally still frequently travel moderate to great distances in search of food and mates. These migrations often occur within corridors. When residential subdivisions, roads and businesses pop up within these corridors the results can be damaging if not devastating to both animals and people. Knowing where these corridors are and protecting them from unnecessary development and mitigating impacts where development is necessary helps to ensure a healthier habitat and a safer environment for all. The city should consult with Wyoming Game and Fish to see if they have any mapped corridors.

Measures of Progress:

- Change in the type and amount of riparian vegetation
- Stream turbidity and bank erosion
- Number of wetland areas identified and protected
- Number of wildlife corridors identified and protected

Objective: Successfully manage the Popo Agie River

The Popo Agie River is a defining characteristic of Lander. It provides life-sustaining water and serves as a recreational and wildlife resource. Successfully managing the river will mean protecting it from overuse and development and respecting its natural cycles and rhythms.

Actions:

2-13. Respect and preserve the natural rhythm and flow of the Popo Agie River to the maximum extent practicable.

The Popo Agie River has a natural flow and rhythm tied to the seasons. During the fall and winter months, snow in the Wind River Range accumulates and stores water. During the spring the snow melts releasing stored water, which quickly drains away from the mountains in rivers like the Popo Agie. Spring flow is peak flow for the Popo Agie. As snowmelt gradually disappears river levels decrease and may reduce to very low flows during the dry months of middle and late summer. The natural systems and habitat associated with the river are dependent on the cycles of the river. Withdrawing too much water causing prolonged low flows or channeling additional water into the river resulting in unnaturally high summer flows could disrupt the natural ecosystem.

2-14. Encourage conservation of public water supplies and other direct draws from the Popo Agie.

The Popo Agie provides enough water to sustain the current City of Lander and projected growth as long as we use our water wisely. Wasting water may lead to overuse, which could cause unnaturally low flows during much of the year endangering wildlife and changing the character of the river.

2-15. Minimize impervious coverage in the 100 year floodplain.

The 100 year floodplain has a one percent chance of flooding in any given year. Any development within the floodplain that reduces the ability of the land to absorb and store stormwater can increase the likelihood of flooding and reduce groundwater levels needed to maintain river flow during the summer months. Impervious surfaces such as asphalt, roof tops, packed gravel, and concrete cause stormwater to runoff quickly, often onto adjacent lands or into streams where erosion and flooding can occur.

2-16. Encourage low impact stormwater design for all new development.

Low impact stormwater design means managing stormwater as close to where it falls as possible using decentralized, small controls such as rain barrels, bioretention ("rain gardens"), and filter strips. The goal of low impact design is to mimic the pre-development hydrology of the site as much as possible. That means reducing the velocity of runoff and retaining as much runoff as possible to allow for slower releases and groundwater recharge.

2-17. Develop and implement a river management plan and a flood management plan that balance the need to protect public and private investment with the need to preserve the quality and function of the Popo Agie.

Lander has experienced significant flood events twice over the past fifty years. One such event, the 1963 flood, caused significant damage. The more recent 2010 flood event was a reminder that flood hazards are real. A flood management plan would allow the city the opportunity to plan for and lessen the impacts from a major flood event reducing the likelihood of damage to property and loss of life. The city does have a flood management plan, but it is out of date. The City of Lander, the US Corps of Engineers, and the Popo Agie Conservation District currently have a memorandum of agreement to update the flood management plan.

Measures of Progress:

- Adoption of river management plans that seek to preserve the natural course and flow
- Adopted water conservation strategies and public education programs
- Incorporation of low impact design strategies in land development regulations and public projects
- Amount of impervious coverage in the 100 year floodplain
- Adoption and implementation of a flood management plan to protect the Popo Agie as well as nearby property